

7.5 FHWA RESEARCH AND DEVELOPMENT POOLED-FUND STUDIES--NATIONAL AND REGIONAL (See also Sections 2.5.3.1 and 2.5.3.2)

RESEARCH AND DEVELOPMENT
POOLED-FUND PROCEDURES INTRODUCTION

INTRODUCTION

When widespread national or regional interest is shown in solving a significant problem, research, development, and technology transfer (RD&T) activities may be cooperatively sponsored by several states as pooled-fund studies.

To qualify as a pooled-fund study, more than one State Transportation Agency (STA), or other agencies (local highway agencies, metropolitan planning organizations (MPO), etc.), must find the subject important enough to commit funds to conduct the RD&T activity. The subject must also be one that has not been, or is not being, studied by others, although it could provide for further investigation of a subject not adequately covered.

These projects may be initiated by a STA, a Federal Highway Administration (FHWA) field office, or the FHWA Washington Headquarters. There are two types of pooled-fund studies each discussed in the following Sections.

NATIONAL - a planning or RD&T study or activity expected to solve problems of national significance, usually administered by the FHWA Headquarters office in cooperation with the states and/or MPOs that is funded by state or MPO contributions of FHWA planning and research funds.

REGIONAL - a planning or RD&T study or activity expected to solve problems of regional significance, usually administered by an FHWA regional office in cooperation with a lead state and/or MPO that is funded by state or MPO contributions of FHWA planning and research funds.

Participation in a regional study does not mean that the states or MPOs must all be located within a particular FHWA region or AASHTO region. A regional study may include as few as two states.

Charles W. Niessner is the FHWA contact person for questions regarding pooled-fund issues. He can be reached at 703-285-2100.

7.5.1 National Pooled-Fund Studies Procedures

NATIONAL POOLED-FUND STUDIES

National pooled-fund studies are usually administered by a contract manager from the FHWA Washington Headquarters or the appropriate FHWA region office, who will be guided by a Technical Advisory Committee (TAC) made up of one representative from each participating STA. The pooled-fund process for national studies is outlined in the following flow chart, "National Pooled-Fund Study Process." The following sections provide additional detail of the "steps" in the flow chart.

Solicit Problem Statement

The FHWA Office of Research and Development (HRD-10) will prepare a memorandum to the FHWA Associate and Regional Administrators requesting problem statements for national pooled-fund studies. Copies of the memorandum will be sent directly to the FHWA Division Offices and the state Research Advisory Committee (RAC) members. The memorandum will include the due date and the format for problem statements. (See Section 7.5.1.1.)

Submit Problem Statements

New problem statements may be submitted by a STA, MPO, or FHWA office. Any ongoing projects that require additional funding should also be submitted. They should be submitted in the appropriate format to the FHWA Office of Research and Development (HRD-10). Pooled-fund studies with an estimated cost of less than \$50,000 will not be considered. Preferably studies should be in the \$200,000 to \$300,000 range.

NOTE: Problem statements may be submitted at any time during the year, and they will be retained by HRD-10 until the next program cycle.

Select Problem Statements

The problem statements will be assembled by HRD-10 into a package with a summary listing and information for rating the problems. This package will be distributed to the FHWA R&D technical offices and the RAC members for evaluation. Copies will be provided to the FHWA Region and Division Offices for information. Completed ratings will be returned to FHWA (HRD-10). Based on the ratings from the R&D technical offices and the RAC members, the top rated 8-10 problem statements will be selected for the national pooled-fund program.

Distribute National Solicitation

The selected problem statements will be distributed directly to the RAC members with copies to the FHWA Region and Division Offices. The package will include the individual problem statements, commitment forms for the states to indicate which studies they will support, and a list of all rated projects with their ratings.

Commitment Forms to FHWA

The states will complete the commitment forms (See Section 7.5.1.4, Attachment 2) and return them directly to the FHWA (HRD-10) with copies to the FHWA Division Office. The Division Office will provide a copy of the state's reply to the Regional Office.

Decision to Proceed or Cancel Study

A summary of the state commitments will be prepared by FHWA (HRD-10) and submitted to the FHWA R&D technical office. The FHWA R&D Office Directors will, based on the funding commitments from the states, determine whether to proceed or cancel the study. The Office Directors have the option of 1) canceling the study, 2) reducing the scope to fit the available funds, 3) supplementing the state commitments with FHWA administrative contract funds, or 4) approving the study if sufficient funds have been committed by the states.

Notification of Approved Studies

The FHWA Associate Administrator for Research and Development will, by memorandum, notify the states and FHWA Region and Division Offices which studies have been approved. The memorandum will also include an attachment showing the total funds committed to each study and the states that indicated an interest in the particular study.

Commitment of Funds

Once a study has been approved, the states that indicated a willingness to commit funds submit PR-2 forms (See Section 7.4.) to the FHWA Division Office.

Establish Technical Advisory Committee

The FHWA contact person for each study is responsible for establishing a Technical Advisory Committee (TAC). Each state that committed funds to the study will be invited to participate on the TAC. The TAC member responsibilities are listed in Section 7.5.1.3. Travel expenses for state participation on the TAC will be paid from the pool for those states that contribute at least \$10,000 to the study. Those states that contribute less than \$10,000 will be required to fund their own travel expenses if they wish to participate in the TAC.

Prepare Statement of Work

The FHWA contact person will prepare a draft Statement of Work (SOW) for the study. The SOW will be sent to each of the participating states for review and comment. The FHWA will revise the SOW based on the comments.

Study Initiation

Based on the study requirements, the actual work may be conducted by 1) in-house FHWA staff, 2) an outside contractor, or 3) a state transportation agency.

In-house FHWA Staff

The SOW will be used as the outline to conduct the study. The TAC members will be kept informed of the progress on a quarterly basis. The TAC will be asked to review any interim reports and the draft final report. Copies of the final report will be provided to the TAC members.

Outside Contractor

The SOW along with other supporting documents will be submitted to the FHWA Office of Contracts and Procurement to solicit contractors through the competitive procurement process. This process can take from 6-12 months. Several members of the TAC will be asked to participate on the evaluation panel to rate the proposals. The contractor will be responsible for providing progress reports to the TAC members. The TAC will be asked to review any interim reports and the draft final report. Copies of the final report will be provided to the TAC members.

State Transportation Agency

The SOW will be used to initiate an agreement, through the FHWA Division Office with the state transportation agency. The state may contract the work out in accordance with state procedures or perform the work in-house. The state or its contractor will be responsible for providing progress reports to the TAC members. The TAC will be asked to review any interim reports and draft final reports. Copies of the final report will be provided to the TAC members.

National Pooled-Fund Study Process Flow Chart

NATIONAL POOLED-FUND STUDY PROCESS FLOW CHART		
ITEM	RESPONSIBLE OFFICE	TIME FRAME
Solicit Problems	FHWA (HRD-10)	January
Submit Problems	FHWA, STA	by March 1
Select Problems	RAC, FHWA	by April 1
Distribute National Solicitation	FHWA (HRD-10)	by May 1
Commitment Forms to FHWA	STAs, FHWA ROs & DOs	within 60 days
Decision: Proceed/Cancel Study	FHWA Technical Office	by August 1
Notification of Approved Studies	FHWA (HRD-10)	August
Commitment of Funds	STAs send to FHWA DOs	ASAP
Establish Technical Advisory Committee	FHWA Technical Division	ASAP
Prepare Statement of Work	FHWA Technical Division	ASAP
Study Initiation	FHWA Technical Division	ASAP

7.5.1.1 National Pooled-Fund Solicitation of Problem Statements

LOGO
US Department
of Transportation

Federal Highway
Administration
6300 Georgetown Pike
McLean Virginia 22101-2296

Memorandum

Subject: Action: FY 1996 National Pooled-Fund
Solicitation of Problems Statements
Due: February 28, 1995

Date:

From: Associate Administrator for
Research and Development

Reply to
Attn. of: HRD-10

To: Regional Federal Highway Administrators

You are requested to submit State Planning and Research (SP&R) pooled-fund problem statements for possible inclusion in the FY 1996 SP&R pooled-fund solicitation by February 28. Problem statements should not be longer than two pages in length using the attached "Guidelines for Preparing Pooled-Fund Problem Statements." The same guidelines were used last year. Problem statements that are not prepared in accordance with the guidelines will not be accepted.

At the July National Research Advisory Committee (RAC) meeting in Vail, Colorado, the states expressed a desire to be more involved in the pooled-fund process. In the past the state's participation in the problem solicitation phase had been on an informal basis. With the FY 1996 cycle we are formally soliciting their input. Also, one of the recommendations from the Vail meeting was that the Federal Highway Administration needed to expedite the pooled-fund solicitation process. Therefore, a copy of this memorandum is being sent directly to each state's RAC member.

Revised procedures for both National and Regional Pooled-Fund Studies have been drafted and are being reviewed by a joint RAC-FHWA task group. Although the procedures have not been finalized, we are implementing them with this FY 1996 solicitation. The final procedures will be distributed in early 1995.

Problem statements should be submitted to Mr. Charles W. Niessner, HRD-10, 6300 Georgetown Pike, McLean, Virginia 22101 or faxed to 703/285-2379. Please contact Mr. Niessner at 703/285-2100, if you have any questions on this problem statement solicitation.

signed
John A. Clements, P.E.

Attachment

7.5.1.2 Guidelines for Preparing Pooled-Fund Problem Statements

**GUIDELINES FOR PREPARING POOLED-FUND
PROBLEM STATEMENTS**

1. Title: Brief but descriptive.
2. Audience: Indicate the technical area of the people who might be interested in the subject. This may assist in directing the funding solicitation to the right people in the state.
3. Pooled-Fund Project Number: This will be available only for active studies or studies solicited last year and being prepared for award. New problem statements will not have a project number.
4. Present Funding Commitments: This will be included only for studies solicited in the past. New problem statements will not have any funding commitments. (The exception may be FHWA contracts seeking additional SP&R support.)
5. FHWA Contact: Technical person responsible for the study, routing code, and phone number. Studies submitted by state agencies should list name and phone number of a state contact.
6. Abstract: A concise description of study objectives, proposed research approach, etc.
7. Duration: Expected length of contract.
8. Funding Requirements: This should include total funding required and an indication whether a large percentage of the funds will be needed at any particular point in the study. The funding requirements should indicate other possible sources of funding and provide the states with some indication of their expected level of participation. Various procedures can be used to make this estimate.

For ongoing studies, this section should provide information on how much additional support may be needed, over and above what has already been committed (item 4 above).

9. Expected Benefits: Briefly describe what benefits the states may derive by participating in the study (what's in it for them?).

7.5.1.3 Technical Advisory Committee Member Responsibilities

TECHNICAL ADVISORY COMMITTEE RESPONSIBILITIES

1. Provide technical assistance to the FHWA contact.
2. Review the draft statement of work.
3. Serve on the technical evaluation panel to evaluate proposals.
4. Participate in meetings of the TAC.
5. Review progress reports.
6. Review interim and final reports.
7. Distribute information, as appropriate, within his/her state.

7.5.1.4 National Pooled-Fund Studies Solicitation -- Including Commitment Form, Ballot Summary, and Pooled-Fund Studies Status Report (FY 1996 and Earlier)

The letter of solicitation is distributed directly to the RAC members. The solicitation is addressed to FHWA Regional Offices. Division Offices also receive a copy of the solicitation. Accompanying the memorandum are 1) two page problem statements of the proposed National Pooled-Fund studies, 2) Pooled-Fund SP&R Study Commitment Form, 3) the Ballot Summary indicating each states ranking of all problem statements, and 4) a summary table, "Results and Status of National SP&R Pooled-Fund Studies FY 1996 and Earlier."

The solicitation memorandum follows. The attachments to the memorandum are also included in this Section. The proposed problem statements are listed by problem title only.

LOGO
US Department
of Transportation

**Federal Highway
Administration
6300 Georgetown Pike
McLean Virginia 22101-2296**

Memorandum

Subject: Action: FY 1996 National Pooled-Fund
Solicitation (Reply due: August 11, 1995)

Date: June 29, 1995

From: Associate Administrator for
Research and Development

Reply to
Attn. of: HRD-10

To: Regional Federal Highway Administrators
Federal Lands Highway Program Administrator

Please contact the States within your Region to determine their interest in participating in any of the attached proposed national pooled-fund studies. In this year's solicitation there are brief descriptions of newly proposed national pooled-fund studies which will be initiated if adequate support is obtained from the States to warrant development (Attachment 1). There are no proposed regional pooled-fund studies included in the solicitation.

States should indicate their proposed level of support on the Pooled-Fund SP&R Study Commitment Form (Attachment 2). A separate form should be completed for each of the proposed new studies the State wishes to support. It is not necessary to reaffirm on these forms previous funding pledges to studies that are already active or advancing through the pooled-fund contract process. We encourage any State which has an interest in a particular study, but requires further clarification to contact the person indicated in Attachment e. Questions concerning the mechanics of the solicitation process should be addressed to Mr. Charles W. Niessner, 703/285-2100. Completed forms should be forwarded to Mr. Niessner, HRD-10, by August 11.

Forty States responded to our March 14 memorandum to rank the 44 problem statements. Attachment 3 is a Ballot summary indicating each State's ranking of the problem statements. At the Research Advisory Committee meeting in late summer the States indicated they would like to receive this information.

The following comments are made concerning the selection of problems for the solicitation:

1. Based on the ranking by the States, there was a distinct break in the ranking list after the 13th problem statement. However, four of the problems in the top 13 ranked problem statements will be, or are being, conducted outside of the pooled-fund program.

- ! Problem No S-95-4, Refinement of SHRP Gyrotory Compaction Technique, is a planned FY 1996 NCHRP study, and will be conducted under that program
 - ! Problem No. S-95-17, Capacity of Freeway Facilities During Maintenance, Reconstruction, and Rehabilitation Operation. A similar study is underway at North Carolina State University.
 - ! Problem No. S-95-20, Reusable Truck Mounted Attenuators. Washing State Department of Transportation will conduct this project as a regional pooled-fund study.
 - ! Problem No. S-95-23, Accuracy of Resilient Modules Tests for Pavement Materials. This work is underway by the Federal Highway Administration's Pavement Performance Division.
2. Problem No. S-95-45, Support, Maintenance, and Refinement of the National Transportation Control/ITS Communications Protocol (NTCIP), was added as a critical need by the Intelligent Vehicle/Highway Systems Research Division.

Our March 22 memorandum indicated that SPR-2(181), National Vehicle Detector Test Center, had been combined v proposed study S-94-3, National Test Center for Traffic Data Collection and Monitoring Devices. Additional participati in this combined project is being sought.

This is the only planned national pooled-fund solicitation for FY 1996 by this office. IT may be necessary on occasio request continued or additional support for a specific previously approved study, especially when it had received signii indication of interest but insufficient funding obligations to begin the research in a timely manner.

Attachment 4 is a summary table entitled, "Results and Status of National SP&R Pooled-Fund Studies FY 1996 and Earlier." In that attachment we have indicated study information for all known SP&R pooled-fund studies and actions needed to continue work on the study or bring the study to the next stage of completion.

Those States that pledged funds to previously approved studies that have now been canceled may wish to divert their pledges from the canceled projects to other approved projects or those specific projects listed in Attachment 4 solicit additional financial support. If this situation arises, please advise this office and take the necessary actions to place funds under agreement using the Fiscal Management Information System (FMIS) and PR-2 procedures.

The Region and Division Offices should also convey to the States our request that the necessary PR-2s be processe funds be placed under agreement via the FMIS system for outstanding FY 1995 and earlier pledges for all projects lis in Attachment 4 requiring such action.

(signed R. Betsold for)
John A. Clements, P.E.

4 Attachments

**FY 1996 National Pooled-Fund Solicitation
Attachment 1**

Note: Solicitation Memorandum contained 2 page problem statements.

**FY 1996 NATIONAL POOLED-FUND PROBLEM STATEMENT
TITLE LIST**

S-95-7	Long-Term Field Monitoring of Migrating Corrosion Inhibitors
S-95-14	Use of Lane Striping and Delineators to Control Vehicle Speeds in Work Zones
S-95-22	Development of Fiber Optic Sensors to Monitor the Impact of Truck Weights on Pavements and Structures
S-95-34	Evaluation of Safety Improvements for Intersection Design
S-95-35	Roadside Safety Hardware Crash Tested to NCHRP Report 350
S-95-36	Crash Tested Safety Appurtenances for Work Zones
S-95-45	Support, Maintenance, and Refinement for the National Transportation Control/ITS Communications Protocol (NTCIP)

**FY 1996 National Pooled-Fund Solicitation
Attachment 2**

POOLED-FUND SP&R STUDY COMMITMENT FORM FY 1996 SOLICITATION	
STATE (Name):	Date:
WE WISH TO PARTICIPATE IN STUDY NUMBER: (Use study number in upper right corner of problem statement.)	
PROPOSED LEVEL OF FUNDING SUPPORT: (NOTE: This is not the authorization funding. States will be asked to obligate funds later.)	
PAST:	COMMENTS ON FUNDING LEVELS:
1996:	
1997:	
FUTURE: (FY 1998 & beyond)	
SUPPORT OTHER THAN SP&R FUNDS:	PRIORITY OF RESEARCH
9 Print Final Report	9 Very High
9 Provide Staffing	9 High
9 Utilize 100% State Funds	9 Moderate
9 Other: (please specify)	9 Low
	9 Very Low
COMMENTS:	

RAC Handbook

STATE CONTACT FOR STUDY: (Name, address & phone number)	TECH ADVISORY COMMITTEE REP: (if different than contact)
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Ballot Summary FY 1996 National Pooled-Fund Problems Attachment 3

ASSIGN: 3 for High, 2 for Medium, 1 for Low, 0 for No Need according to the questions in the Rating Criteria.

BALLOT SUMMARY FY 1996 NATIONAL POOLED-FUND PROBLEMS					
Prob. No.	Title	Priority Rating 3	Priority Rating 2	Priority Rating 1	Priority Rating 0
S-95-1	Widened Center Area for Two-Way, Two-Lane Highways	IN,MD	CT,PA,MN,MI,VT,GA,CO,NH,NV,IA,NJ,UT,AL,CA,WY	OR,VA,NE,IL,HI,ID,SD,KS, TX,TN, WI,ME,NY, LA,FL,MS, NM,ND,MO	RI,WA,DC, AZ
S-95-2	Avalanche Detection and Warning	ID,CO,WA, UT	NV,ND,CA, WY	SD,VT,KS, MD,TN,RI, WI,NH, TX, NJ,AL,NM, MO,MI	CT,PA,MN, OR,NE,IL,HI,MI,IN,ME, NY,GA,DC, AZ,IA,LA, FL,MS
S-95-3	Implementation of Mechanically Stabilized Backfill (MSB) into State DOTs	IL,HI,MD, ME,CO,NV,WY,LA,FL, ND	NE,ID,SD,IN, VT,WI,NY, GA,DC,IA, NJ,UT,AL, MO,CA	PA,MN,VA, TN,RI,NH, TX,MS,NM	CT,OR,MI, KS,WA,AZ
S-95-4	Refinement of SHRP Gyrotory Compaction Technique	PA,OR,ID, VT,KS,WI, ME,GA,CO,WY, NV,AZ, LA,NJ,FL, AL,ND,MO,CA,VA	NE,IL,HI,TN, RI, TX,IA, WY,UT,MS	MI,SD,MD, NY,NH,DC, NM	CT,MN,IN

BALLOT SUMMARY FY 1996 NATIONAL POOLED-FUND PROBLEMS					
Prob. No.	Title	Priority Rating 3	Priority Rating 2	Priority Rating 1	Priority Rating 0
S-95-5	Concepts of Crash Reduction Involving Wrong-way Travel and Out-of-Lane Drift	PA,MN,OR,M D,NY,NM,MO	MI,VT,WI, GA,TX,NV, IA,WY,MS, CA	CT,NE,IL,HI,ID ,SD,IN,KS,RI,M E,CO, NH,AZ,LA, NJ,FL,UT, AL,ND	WA,DC,TN
S-95-6	Crash Testing of Precast Concrete "F" Shape Median Barrier	NE,MD,NH	CT,OR,ID, SD,VT,TN, RI,WI,ME, GA,DC,NV, AZ,UT,AL, ND	PA,HI,IN,CO,T X,WY,LA, NJ,FL,MS, MO	MN,VA,IL, MI,KS,NY, WA,IA,NM, CA
S-95-7	Long Term Field Monitoring of Mitigating Corrosion Inhibitors	CT,OR,HI, VT,MD,RI, NY,TX,DC, NV,IA,WY, UT,AL,MO	MN,NE,IL, ID,SD,KS,TN, ME,GA,CO, NH,LA,NJ, FL,NM,CA	VA,MI,WI, AZ,MS,ND	PA,IN,WA
S-95-8	An Assessment of Tort Litigation Pertaining to Highway Systems	CT,PA,MD, NY,WA,DC, AZ,LA,AL	NE,ID,MI,RI, NH,TX,NV, IA,UT,MO, CA	MN,OR,IL, HI,SD,KS,TN,W I,ME,GA, WY,FL,MS, NM	VT,NJ,ND, CO
S-95-9	Connecting Bicycle, Pedestrian and Intermodal Infrastructure in the Northeast United States	PA,VT,NY	MN,VA,MD, DC,WY,CA	NE,MI,IN,KS,T N,WI,ME, NH,TX,NV, NJ,FL,UT, NM	CT,OR,IL, HI,SD,RI, GA,WA,AZ, IA,LA,AL, MS,ND,MO, ID,CO
S-95-10	Effect of Low-Sulfur Diesel Fuel on Engines and Injection Pumps	NY,WY	MD,TN,DC, UT	CT,PA,MN, NE,OR,HI, SD,RI,ME, NH,TX,NV, LA,FL,AL, MO	IL,MI,IN,AZ,V T,KS,WI, GA,WA,IA, NJ,MS,NM, ND,CA,ID, CO

BALLOT SUMMARY FY 1996 NATIONAL POOLED-FUND PROBLEMS					
Prob. No.	Title	Priority Rating 3	Priority Rating 2	Priority Rating 1	Priority Rating 0
S-95-11	Finite Element Modeling of a Neoprene Capping System for Concrete Cylinder Testing	IL,RI,NY, CO,DC	CT,PA,MN, NE,HI,ID, MD,NJ,UT, MS,MO,CA	OR,VA,MI, SD,IN,VT,KS,T N,WI,ME, GA,NH,TX, WA,NV,IA, WY,FL,AL	AZ,LA,NM, ND
S-95-12	CADD-Based Expert System for Blowing Snow Control	NE,NY,UT, CA	MN,VA,SD, KS,WY,MO	CT,PA,OR,IL,I D,MI,SD,IN,VT ,MD,TN, RI,WI,ME, CO,NH,TX, DC,NV,IA, NJ,AL	HI,GA,WA, AZ,LA,FL, MS,NM,ND
S-95-13	Bridges and Pavements-How Long Will They Last	PA,MN,NE, VT,MD,TN, WI,NY,WY, NJ,AL,MO	VA,IL,RI,GA, TX,DC,NV, AZ,UT,CA	CT,OR,ID, MI,SD,ME, NH,IA,LA, FL,MS,NM, ND	HI,IN,KS, WA,CO
S-95-14	Use of Lane Striping and Delineators to Control Vehicle Speeds in Work Zones	CT,PA,OR, NE,IL,MI,IN,V T,KS,MD,WI,N Y,WA,NV,WY, MO	IL,HI,ID,TN, GA,NH,TX, IA,LA,UT, AL,MS,ND	MN,SD,ME, DC,AZ,NJ, FL,CA	VA,RI,CO, NM
S-95-15	Water Quality Modeling for Highway Storm Water Runoff	PA,MN,IL, NY,UT	CT,NE,ID,IN,M D,TN,WI, WA,NV,IA, WY,LA,CA	OR,HI,MI, SD,VT,KS,RI,M E,GA,CO, NH,TX,DC, AZ,NJ,AL, MS,ND,MO	FL,NM
S-95-16	A Study of Level of Service of Extended Freeway Sections	MN,VA,IN, WA,AL	CT,PA,OR, NE,HI,KS,WI,N Y,GA,WY, UT,MO	IL,MI,SD, MD,TN,RI, ME,CO,NH, TX,DC,NV, AZ,IA,LA,NJ,F L,MS,ND	VT,NM,CA, ID

BALLOT SUMMARY FY 1996 NATIONAL POOLED-FUND PROBLEMS					
Prob. No.	Title	Priority Rating 3	Priority Rating 2	Priority Rating 1	Priority Rating 0
S-95-17	Capacity of Freeway Facilities During Maintenance, Reconstruction and Rehabilitation Operations	PA,MN,OR,VA,NE,IL,MI,MD,TN,NY,CO,NV,AZ,IA,MO,CA	CT,ID,SD,IN,KS,WI,GA,NJ,UT,AL,MS	HI,RI,ME,NH,TX,DC,WY,LA,NM,ND	VT,WA
S-95-18	Thermoplastic Pipe Design Procedures	MN,OR,VA,HI,ID,MI,KS,NY,WA,NV,IA,WY,FL,AL,MO,CA	CT,PA,NE,SD,IN,MD,TN,RI,WI,ME,TX,DC,AZ,LA,UT,ND	IL,VT,GA,CO,NH,NJ,MS	NM
S-95-19	Corrosion Protection Integrity of Cable Stay Systems	CT,VA,IL,RI,GA,TX,WA,IA,FL,CA	NE,MD,DC,WY,LA,AL,MO	PA,HI,ID,MI,SD,IN,VT,KS,TN,WI,ME,NY,NH,NV,NJ,UT,MS,ND	MN,OR,AZ,NM,CO
S-95-20	Reusable Truck Mounted Attenuator	CT,VA,SD,MD,GA,CO,WA,DC,IA,UT,AL	PA,MN,OR,NE,ID,IN,VT,KS,TN,RI,NY,NH,TX,NV,AZ,WY,LA,NJ,MS,NM,ND,MO,CA	IL,HI,WI,ME,FL	MI
S-95-21	Light Emitting Diode Signal Specification	MN,OR,NE,IL,MD,NV,IA,WY,NJ	CT,PA,MI,AZ,SD,IN,TN,RI,WI,NY,GA,CO,TX,WA,DC,LA,UT,ND,MO,CA	VA,HI,ID,VT,KS,ME,NH,FL,AL,MS	NM

BALLOT SUMMARY FY 1996 NATIONAL POOLED-FUND PROBLEMS					
Prob. No.	Title	Priority Rating 3	Priority Rating 2	Priority Rating 1	Priority Rating 0
S-95-22	Development of Fiber Optic Sensors to Monitor the Impact of Truck Weights on Pavements and Structures	OR,VA,ID,VT,MD,ME,NY,DC,IA,WY,NJ,UT,MO	CT,PA,MN,NE,MI,SD,KS,TN,RI,WI,GA,TX,NV,AZ,LA,AL,MS,ND	IL,HI,IN,CO,NH,FL,CA	WA,NM
S-95-23	Accuracy of Resilient Modulus Tests for Pavement Materials	MN,ID,ME,NY,GA,TX,DC,AZ,NJ,AL,MS	PA,OR,VA,NE,IL,HI,MI,VT,KS,MD,NH,WA,IA,WY,LA,FL,UT,MO,CA	CT,SD,IN,TN,RI,WI,NV,NM,ND	CO
S-95-24	Proper Guardrail Termination at Driveway Openings	PA,OR,MD,GA,NJ	NE,IL,ID,MI,SD,IN,TN,WI,ME,NH,NV,IA,WY,MS,ND,CA	MN,VA,HI,VT,KS,NY,TX,WA,LA,FL,UT,AL,NM,MO	CT,RI,CO,DC,AZ
S-95-25	Pennsylvania Operations Warning Light System (PA OWLS)	IN,MD,IA,WY,MO	CT,PA,OR,NE,TN,WI,NH,DC,NJ,UT	MN,HI,ID,MI,SD,KS,ME,NY,GA,TX,WA,NV,AZ,FL,AL,MS,NM,ND,CA	VA,IL,VT,RI,CO,LA
S-95-26	Sonic Traffic Paint Lines	OR,VT,KS,RI,WA,DC,FL,UT,AL	CT,MN,NE,ID,SD,IN,TN,WI,NY,NV,LA,MS,MO,CA	PA,IL,HI,MI,MD,ME,GA,NH,TX,IA,WY,NJ,ND	VA,CO,AZ,NM
S-95-27	Laboratory Testing of Traffic Line Paint in Place of Field Deck Testing	OR,VT,NV,UT,MO,CA	PA,NE,MI,IN,KS,MD,TN,NY,GA,NJ	MN,IL,HI,ID,SD,ME,NH,DC,AZ,IA,WY,LA,FL,AL,MS,ND,RI	CT,VA,CO,TX,WA,NM

BALLOT SUMMARY FY 1996 NATIONAL POOLED-FUND PROBLEMS					
Prob. No.	Title	Priority Rating 3	Priority Rating 2	Priority Rating 1	Priority Rating 0
S-95-28	Side Impact Enhancements to Guard Rail Ends	PA,NE,MD,GA,DC,AL	MN,OR,VA,IL,MI,IN,VT,KS,TN,ME,NH,TX,WA,NV,WY,NJ,UT,MO	CT,HI,ID,SD,WI,NY,AZ,IA,LA,FL,MS,NM,ND,CA,RI	CO
S-95-29	Impact Assessment Methodology for Endangered Freshwater Mussels	PA	CT,VA,GA,NJ,AL	OR,KS,MD,TN,WI,ME,NY,NH,WA,IA,WY,UT,CA	MN,NE,IL,HI,ID,MI,SD,IN,VT,RI,CO,TX,DC,NV,AZ,LA,FL,MS,NM,ND,MO
S-95-30	Impact Assessment Methodology for Socio-Economics	PA,MN,OR,VA,VT,ME,WY,CA	CT,NE,KS,MD,GA,NV,IA,LA,UT	IL,HI,SD,IN,TN,WI,NY,NH,TX,AZ,NJ,FL,AL,MS	ID,MI,RI,WA,DC,NM,ND,MO
S-95-31	Wetland Banking Accounting Methodology	PA,OR,VA,HI,WA,WY,UT,CA	NE,IL,SD,KS,MD,WI,ME,GA,NH,TX,IA,NJ,AL,MS	ID,IN,VT,NY,DC,NV,AZ,LA,FL,NM	CT,MN,MI,RI,CO,ND,MO
S-95-32	Effective Utilization of Natural Forces and Ecological Principles in Developing Vegetation Management Strategies and Processes for Properties Managed by Transportation Agencies	PA,MD,NY,LA,UT	VA,NE,ID,TX,WY,NJ,MO	OR,IL,HI,MI,VT,TN,ME,GA,DC,NV,AZ,IA,FL,MS,CA	CT,MN,SD,IN,KS,RI,WI,CO,NH,WA,AL,ND
S-95-33	Safety Management System-Evaluation	CT,OR,IL,ID,VT,MD,GA,CO,NV,AZ,IA,WY,LA,CA	PA,MN,NE,MI,TN,WI,NY,NJ,FL,UT,AL,MS,MO	HI,SD,IN,KS,ME,NH,TX,NM,ND	RI,WA,DC

BALLOT SUMMARY FY 1996 NATIONAL POOLED-FUND PROBLEMS					
Prob. No.	Title	Priority Rating 3	Priority Rating 2	Priority Rating 1	Priority Rating 0
S-95-34	Evaluation of Safety Improvements for Intersection Design	CT,MN,OR, VA,IL,MD, TN,WI,NY, DC,AZ,IA, WY,AL,MS, CA	PA,ID,MI,SD,I N,VT,ME, GA,CO,TX, NV,LA,NJ, UT,MO	NE,HI,KS, NH,WA,FL, NM,ND	RI
S-95-35	Roadside Safety Hardware Crash Tested to NCHRP Report 350	CT,MN,OR, NE,IL,MI, MD,GA,CO, TX,WA,DC,AZ ,WY,MO,CA	PA,VA,ID, SD,IN,VT,KS,W I,NY,NH, NV,LA,NJ, UT,MS,ND	HI,TN,RI, ME,IA,FL	AL,NM
S-95-36	Crash Tested Safety Appurtenances for Work Zones	MN,OR,MI, MD,NY,DC, NV,AZ,WY, MO	CT,PA,VA, NE,IL,HI,ID,SD, IN,VT,KS,WI,M E,GA, CO,NH,TX, WA,IA,LA, NJ,FL,UT, MS,ND,CA	TN,RI,NM	AL
S-95-37	Development of Warrants for Grade Separated Crossings of Nonmotorized Trails with Roadways	MD,WA,WY	CT,MN,OR, NE,IN,GA, UT,AL,CA	PA,VA,IL,HI,ID ,MI,SD,VT,KS, TN,WI, ME,NY,NH, TX,DC,NV, AZ,LA,NJ, FL,MS,ND, MO	RI,CO,IA, NM
S-95-38	Retrofitting Existing Streets and Highways to Accommodate Bicyclists and Pedestrians	MN,OR,VT, NY,CO,WA, NV,IA	CT,PA,NE, MD,TN,WI, ME,GA,NH, TX,LA,FL, UT,AL,CA	HI,ID,MI,SD,IN ,KS,AZ, WY,NJ,MS, ND	IL,RI,DC, NM,MO

BALLOT SUMMARY FY 1996 NATIONAL POOLED-FUND PROBLEMS					
Prob. No.	Title	Priority Rating 3	Priority Rating 2	Priority Rating 1	Priority Rating 0
S-95-39	Telerobotic Pipe Laying and Backfilling	WY,FL,AL, CA	CT,PA,KS, MD,RI,WI, LA,UT,MO	MN,OR,NE, IL,HI,MI,SD, IN,VT,ME, NY,GA,CO, NH,TX,NV, AZ,IA,NJ, MS,ND	ID,TN,WA, DC,NM
S-95-40	Evaluation of the Functional and Operational Human Factors Aspects of LED Signal Heads	MD,TN,WI	PA,MN,VA, NE,IL,MI,IN,V T,GA,TX, WA,NV,AZ, IA,WY,NJ, UT,MO	CT,OR,ID, SD,KS,ME, NY,CO,NH, DC,LA,FL, AL,MS,ND	HI,RI,NM, CA
S-95-41	Re-Evaluation of MUTCD Signal Warrants	OR,VA,IL, ID,MD,TN, NY,NV,AZ	CT,NE,MI, IN,KS,WI, GA,WA,IA, WY,LA,FL, UT,AL,MS, MO,CA	PA,HI,SD, VT,RI,ME, NH,TX,DC, NJ,ND	CO,NM
S-95-42	A Modern Design Standard for Rock Fallout Areas	PA,MN,OR, ID,VT,NY, WA,WY,MO	SD,MD,TN, WI,NV,AZ, IA,NJ,FL,UT,A L,CA	CT,NE,HI, KS,RI,ME, GA,CO,NH, DC,ND	IL,MI,IN, TX,LA,MS, NM
S-95-43	Use of Lime and Fly-Ash to Improve Marginal Aggregate Base Course	VA,ME,DC, FL	MN,OR,IL, HI,IN,GA, WY,LA,NJ, UT,MS,NM, ND,MO	PA,NE,ID, MI,VT,KS, MD,TN,RI, NY,CO,NH, WA,NV,IA, AL,CA	CT,SD,TX, AZ,WI
S-95-44	Effects of Manufactured Sand on Porosity and Permeability of Portland Cement Concrete	CT,ME,MO	PA,VA,NE, IL,HI,VT, KS,MD,NV, WY,NJ,FL, UT,NM,CA	MN,OR,ID, MI,IN,TN,RI,G A,NH,TX, WA,DC,IA, LA,AL,MS, ND,WI	SD,CO,AZ, NY

ASSIGN: 3 for High, 2 for Medium, 1 for Low, 0 for No Need according to the questions in the Rating Criteria.

Results and Status of National SP&R Pooled-Fund Studies FY 1996 and Earlier
Attachment 4

Results and Status of National SP&R Pooled-Fund Studies FY 1996 and Earlier					
Study Title, Number, and Contact Information	SP&R \$ Pledged	Estimated \$ Needed	SP&R \$ Under Agreement	Study Status	Comments and FY 1996 Actions Needed
Comprehensive Transportation Information & Planning System (CTIPS) E. Kashuba, HPM-40 202/366-0160 SPR-2(190)	NA	No Set Amount	0	New Study	Obligation of funds by participating States
Support, Maintenance and Refinement of the National Transportation Control/ITS Communications Protocol (NTCIP) A. Santiago, HSR-11 703/285-2092 SPR-2(189)	267,500	750,000*	32,500	New Study	Obligation of funds by Participating States *Supplemented with FHWA funds
Crash Tested Safety Appurtenances for Work Zones C. McDevitt, HSR-20 703/285-2418 SPR-2(188)	275,000	600,000	58,500	New Study	Obligation of funds by participating States
Roadside Safety Hardware Crash Tested to NCHRP Rpt 350 C. McDevitt, HSR-20 703/285-2418 SPR-2(187)	547,000	1,200,000	65,000	New Study	Obligation of funds by participating States
Evaluation of Intersection Design Improvements for Safety Management M. Griffith, HSR-20 703/285-2382 SPR-2(186)	465,000	1,000,000*	75,000	New Study	Obligation of funds by participating States *Supplemented with FHWA funds

Results and Status of National SP&R Pooled-Fund Studies FY 1996 and Earlier					
Study Title, Number, and Contact Information	SP&R \$ Pledged	Estimated \$ Needed	SP&R \$ Under Agreement	Study Status	Comments and FY 1996 Actions Needed
Development of Fiber Optic Sensors to Monitor the Impact of Truck Weights on Pavements and Structures R. Livingston, HNR-2 703/285-2903 SPR-2(185)	114,500	120,000	49,500	New Study	Obligation of funds by Participating States
Long Term Monitoring of Mitigating Corrosion Measures P. Virmani, HNR-10 703/285-2439 SPR-2(184)	268,500	250,000	33,500	New Study	Obligation of funds by participating states
Development of Computer Based Training (CBT) Lessons M. Moravec, HTA-11 202/366-8026 SPR-2(183)	139,000	300,000	71,000	Active	Obligation of funds by participating States. Reduced number of courses to be developed.
Development and Validation of Traffic Data Editing Procedures K. Gupta, HNR-30 703/285-2376 SPR-2(182)	200,000	400,000	190,000	Active	Obligation of funds by participating States. *Includes HNR funds to supplement SPR pledges.
National Vehicle Detector Test Center R. Gillmann, HPM-30 202/366-5042 SPR-2(181)	175,000	1,000,000*	190,000	Active	Obligation of funds by participating States. *Includes HSR funds to supplement SPR pledges.
Pavement Performance Models W. Kenis, HNR-30 703/285-2064 SPR-2(180)	105,000	150,000*	65,000	New Study	Obligation of funds by participating States. *Includes HNR funds to supplement SPR pledges.
Load Testing of Instrumented Pavement Sections W. Kenis, HNR-30 703/285-2064 SPR-2(179)	330,000	375,000*	318,500	Active	Obligation of funds by participating States. *Includes HNR funds to supplement SPR pledges.

Results and Status of National SP&R Pooled-Fund Studies FY 1996 and Earlier					
Study Title, Number, and Contact Information	SP&R \$ Pledged	Estimated \$ Needed	SP&R \$ Under Agreement	Study Status	Comments and FY 1996 Actions Needed
Seasonal Changes in Pavement Material Properties W. Kenis, HNR-30 703/285-2064 SPR-2(178)	283,500	225,000	247,500	Active	Obligation of funds by participating States.
Fatigue Test of High Strength Prestressed Concrete Bridge Girders G. Washer, HNR-20 703/285-2388 SPR-2(177)	206,000	130,000	204,000	Active	Obligation of funds by participating States.
Validation of SHRP Asphalt and Asphalt Mixture Specifications Using Accelerated Testing R. Bonaquist, HNR-30 703/285-2629 SPR-2(176)	588,000	350,000	464,000	New Study	Obligation of funds by participating States.
Development of Standard Reference Soils A. DiMillio, HNR-10 703/285-2436 SPR-2(175)	58,000	100,000	41,000	Active	Obligation of funds by participating States. SPR pledges will be combined with other funding.
Accelerated Pavement Testing of Crumb Rubber Modified Asphalt Pavements R. Bonaquist, HNR-30 703/285-2629 SPR-2(174)	769,800	800,000*	544,600	New Study	Obligation of funds by participating States. *Includes HNR funds to supplement SPR pledges.
Adhesion Criteria Between Water Based Inorganic Zinc Coatings & Their Topcoats for Steel Bridges S. Chong, HNR-20 703/285-2726 SPR-2(173)	175,500	150,000	152,500	Active	Obligation of funds by participating States. Contract Completion Date: 9/30/97

Results and Status of National SP&R Pooled-Fund Studies FY 1996 and Earlier					
Study Title, Number, and Contact Information	SP&R \$ Pledged	Estimated \$ Needed	SP&R \$ Under Agreement	Study Status	Comments and FY 1996 Actions Needed
Aerial Platform System for Bridge Inspection (Phase II) C. Woo, HNR-2 703/285-2444 SPR-2(172)	206,000	400,000*	136,000	Active	Obligation of funds by participating States. *Includes HAR funds to supplement SPR pledges.
Predicting HOV Facility Demand W. Berman, HTV-31 202/366-4069 SPR-2(171)	224,000	200,000	199,000	Active	Obligation of funds by participating States.
High Strength Concrete for Bridges S. Duwadi, HNR-10 703/285-2472 SPR-2(170)	936,000	2,000,000*	476,000	Active	Obligation of funds by participating states. *Includes HAR and OTA funds to supplement SPR pledges.
The Design and Construction of Backfill Envelopes, Foundations, and End Treatments for Underground Structures J. O'Fallon, HNR-10 703/285-2089 HPR-2(169)	177,000	150,000*	167,000	Active	Obligation of Funds by Participating States. *Amount is for Pooled-Fund portion of a larger contract partially funded by other sources.
Management of the Discharge and Quality of Highway Runoff in Karst Areas to Control Impacts to Ground Water H. Jongedyk, HNR-20 703/285-2085 HPR-2(168)	253,000	300,000*	273,000	Active	*Includes FHWA Program Funds to Supplement SP&R Pledges.
Development of Anti-Icing Treatments B. Chollar, HNR-20 703/285-2342 HPR-2(167)	366,000	500,000*	376,000	Active	*Includes FHWA Program Funds to Supplement SP&R Pledges

Results and Status of National SP&R Pooled-Fund Studies FY 1996 and Earlier					
Study Title, Number, and Contact Information	SP&R \$ Pledged	Estimated \$ Needed	SP&R \$ Under Agreement	Study Status	Comments and FY 1996 Actions Needed
Performance Evaluation of Crumb Rubber Modifier (CRM) in Asphalt Pavements R. Bonaquist, HNR-30 703/285-2629 HPR-2(166)	1,099,500	1,000,000*	841,000	Active	Obligation of Funds by Participating States. *Amount is for Pooled-Fund portion of a larger contract partially funded by other sources.
Updating Existing AASHTO "Guide Specifications for Horizontally Curved Highway Bridges, 1980" S. Duwadi, HNR-10 703/285-2472 HPR-2(165)	220,000	2,531,000*	185,000	Active	Obligation of Funds by Participating States. *Includes FHWA Program Funds to Supplement SP&R Pledges with a combined project with others.
Development of a Thrie Beam Bullnose Median Barrier Terminal L. Meczowski, HSR-20 703/285-2420 HPR-2(164)	84,000	53,000	104,000	Delayed - Pending Other test Results	No further action by States
Calcium Magnesium Acetate at Lower Production Cost B. Chollar, HNR-20 703/285-2342 HPR-2(163)	180,500	250,000*	215,500	Active	Obligation of Funds by Participating States. *Includes FHWA Program Funds to Supplement SP&R Pledges.
Revised Planning Methodology for Signalized Intersections and Operational Analyses of Exclusive Left Turn Lanes A. Barkawi, HSR-10 703/285-2093 HPR-2(162)	206,500	210,000	196,500	Active	Obligation of Funds by Participating States.

Results and Status of National SP&R Pooled-Fund Studies FY 1996 and Earlier					
Study Title, Number, and Contact Information	SP&R \$ Pledged	Estimated \$ Needed	SP&R \$ Under Agreement	Study Status	Comments and FY 1996 Actions Needed
Determination of the Safety and Capacity of Pedestrian Crosswalks C. Tan, HSR-20 703/285-2071 HPR-2(161)	95,000	-0-	-0-	Canceled	NONE
Verification Method for Evaluating the Integrity of Seals in Geotechnical Boreholes M. Adams, HNR-10 703/285-2161 HPR-2(160)	132,000	252,000*	132,000	Active (2 Contracts)	*Includes FHWA Program Funds to Supplement SP&R Pledges. Additional pledges are encouraged.
Interpretation of Road Roughness Profile Data D. Brown, HNR-20 703/285-2626 HPR-2(159)	224,000	340,000*	234,000	Active	*Includes FHWA Program Funds to Supplement SP&R Pledges. Additional Pledges are encouraged.
Evaluation of Recycled Materials for Roadside Appurtenances C. McDevitt, HSR-20 703/285-2418 HPR-2(158)	174,500	250,000	228,000	Active	ADDITIONAL PLEDGES ARE ENCOURAGED
Testing and Evaluating Traffic Detectors M. Mills, HSR-10 703/285-2402 HPR-2(157)	177,000	600,000*	183,000	Active	*Includes FHWA Program Funds to Supplement SP&R Pledges. Completion Date: January, 1996
A Guide for Establishing Speed Limits on Public Highways P. Hatzi, HTA-31 202/366-8036 HPR-2(156)	75,500	-0-	-0-	Canceled	NONE

Results and Status of National SP&R Pooled-Fund Studies FY 1996 and Earlier					
Study Title, Number, and Contact Information	SP&R \$ Pledged	Estimated \$ Needed	SP&R \$ Under Agreement	Study Status	Comments and FY 1996 Actions Needed
Durability of Geosynthetics A. DiMillio, HNR-10 703/285-2436 HPR-2(155)	637,000	879,000*	712,000	Active	Additional Pledges are Encouraged. *Includes FHWA Program Funds to Supplement SP&R Pledges.
Effectiveness of Demand Management Strategies A. Barkawi, HSR-10 703/285-2093 HPR-2(154)	197,500	267,000*	167,500	Active	None - Final Report being Prepared
Gradation Testing of Asphalt Mixes M. Rafalowski, HNG-23 202/366-1571 HPR-2(153)	214,000	203,000	198,000	Active	None - Final Report being Prepared
Guidelines for Developing and Implementing a Public Safety Awareness Campaign G. Schoene, HTV-12 202/366-2196 HPR-2(152)	93,000	-0-	-0-	Canceled	NONE
National Geotechnical Experimentation Sites A. DiMillio, HNR-10 703/285-2436 HPR-2(151)	123,000	123,000	118,000	Completed	None Final Report # No. FHWA-RD-94-071
Design, Construction and Rehabilitation of Continuously Reinforced Concrete Pavements J. Sherwood, HNR-30 703/285-2619 HPR-2(150)	273,000	466,075	273,000	Active	NONE - Final reports being prepared.

Results and Status of National SP&R Pooled-Fund Studies FY 1996 and Earlier					
Study Title, Number, and Contact Information	SP&R \$ Pledged	Estimated \$ Needed	SP&R \$ Under Agreement	Study Status	Comments and FY 1996 Actions Needed
Full-Scale Accelerated Testing of In-Service Pavements R. Bonaquist, HNR-20 703/285-2629 HPR-2(149)	450,000	-0-	-0-	Canceled	NONE
Arterial Analysis Package - Signal Timing Update & Support J. Byun, HTV-32 202/366-2204 HPR-2(148)	120,000	122,500	100,000	Completed	No further action by States.
Disposal of Wastes from Highway Materials Testing Laboratories E. Bastian, HNR-20 703/285-2086 HPR-2(147)	75,000	60,000	59,500	Completed	No further action by States. Report # FHWA-RD-91-125
Testing of State Roadside Safety Systems C. McDevitt, HSR-20 703/285-2418 HPR-2(146)	365,855	No Set Amount	653,855	Active	Obligation of Funds by Participating States on Test-by-Test Basis.
Expert Systems for Highway Applications - Freeway Incident Management Daniel Schierer, HTV-32 202/366-2219 HPR-2(145)	200,000	195,000	200,000	Completed	No further action by States. Expert system developed under project was not readily useable.
Testing of Small and Large Sign Supports R. King, HSR-20 703/285-2468 HPR-2(144)	450,000	450,000	421,500	Completed	No further action by States
Effect of Bicycle Accommodations on Safety and Traffic Operations J. Fegan, HEP-50 202/366-5007 HPR-2(143)	162,000	155,000	162,000	Completed	No further action by States.

Results and Status of National SP&R Pooled-Fund Studies FY 1996 and Earlier					
Study Title, Number, and Contact Information	SP&R \$ Pledged	Estimated \$ Needed	SP&R \$ Under Agreement	Study Status	Comments and FY 1996 Actions Needed
Rockfall Hazard Rating System A. DiMillio, HNR-10 703/285-2436 HPR-2(142)	124,250	170,000	120,000	Completed	No further action by States.
No Project with HPR-2(141) Number					
Construction Engineering Management R. Schroeder, HNG-23 202/366-1577 HPR-2(140)	217,000	203,000	200,000	Completed	No further action by States.
Evaluation of Design and Performance of Pozzolan Stabilized Aggregate Base Courses D. Fohs, HNR-30 703/285-2018 HPR-2(139)	259,000	-0-	-0-	Canceled	None
Safety of Wider Trucks on Narrow Roadways J. True, HSR-20 703/285-2121 HPR-2(138)	218,000	466,500	188,000	Completed	No further action by States.
Vessel Passage of Navigable Waterway Bridge Crossings E. Munley, HNR-10 703/285-2438 HPR-2(137)	202,000	248,000	202,000	Closed Out	No further action by States
Noise Barriers H. Jongedyk, HNR-20 703/285-2085 HPR-2(136)	697,000	572,000	697,000	Active	No further action by States
No Project with HPR-2(135) Number					

Results and Status of National SP&R Pooled-Fund Studies FY 1996 and Earlier					
Study Title, Number, and Contact Information	SP&R \$ Pledged	Estimated \$ Needed	SP&R \$ Under Agreement	Study Status	Comments and FY 1996 Actions Needed
Test and Evaluation of Bridge Rails and Transitions C. McDevitt, HSR-20 703/285-2418 HPR-2(134)	1,072,500	1,611,270*	1,082,500	Active	*Includes FHWA Program Funds to Supplement SP&R Pledges.
Culvert Repair Practices K. Black, HNG-23 202/366-4657 HPR-2(133)	211,500	230,000	198,500	Completed	No further action by States Reports: Vol. I, FHWA-RD-94-096 Vol. II FHWA-RD-95-089
Project No's HPR-2(132) back to HPR-2(115) (See Next Page for Listing)					Awaiting Final Actions by FHWA Finance Division.

National SP&R Pooled-Fund Projects

<u>Project No.</u>	<u>Title</u>	<u>Status</u>
HPR-2(115)	Chloride Content in Bridges	Closed out
HPR-2(116)	Rural Two-lane Highway Operational Improvements	Closed out
HPR-2(117)	Economic Management System Design	Closed out
HPR-2(118)	Equipment Management System Design	Closed out
HPR-2(119)	Construction Engineering Manpower Management	Closed out
HPR-2(120)	Performance of Alternate Coatings in the Environment	Closed out
HPR-2(121)	TTI Skid Trailer Calibration	Closed out
HPR-2(122)	Administrative Settlement of Contract Claims	Closed out
HPR-2(123)	Development of Methods & Pilot Plant CMA	Closed out
HPR-2(124)	Asphalt Rubber Paving Materials	Closed out
HPR-2(125)	Traffic Control Systems Handbook	Closed out
HPR-2(126)	Integrated Drainage Design Computer System	Completed
HPR-2(127)	Cost Effective Geometric Design Standards for 3R Projects	Closed out
HPR-2(128)	No Project With This Number	
HPR-2(129)	Evaluation of Wetland Mitigation Measures	Closed out
HPR-2(130)	Eastern Skid Trailer	Closed out
HPR-2(131)	Production of High Quality CMA	Closed out
HPR-2(132)	Standards for Segmental Prestressed Concrete Box Girder Bridges	Canceled

7.5.2 Regional Pooled-Fund Studies Procedures

REGIONAL POOLED-FUND STUDIES

Regional Pooled-Fund Studies are usually administered by an FHWA Regional Office in cooperation with a lead state. The lead state serves as the contracting and administrative office for the study. Regional Pooled-Fund Studies may be initiated at any time during the year. The pooled-fund process for regional studies is outlined following this discussion. (See also Section 7.5.2.1 for Process Summary.)

Prepare Problem Statement

The state that wishes to initiate a Regional Pooled-Fund Study will prepare a problem statement using the format found in Section 7.5.1.2.

Solicit Interest

The originating state will distribute the problem statement to the other state RAC members to determine if there is interest in participating and the level of funding. A copy of the solicitation should be sent to the FHWA Division and Region Offices. Also, a form similar to the expression of interest form (See Section 7.5.2.2) should be included with the solicitation letter.

Request of 100 Percent SP&R Funds

A request for approval of 100 percent SP&R funding should be submitted by the originating state through the FHWA Division and Region Offices to the Associate Administrator for Research and Development. The submittal should include the problem statement and an indication of the results of the above solicitation.

Approval of 100 Percent SP&R Funds

To submittal will be reviewed by the appropriate R&D technical office. The submitting office will be advised in writing whether or not the study is approved for 100 percent SP&R funding. If a study is not approved for 100 percent funding, it is still eligible for SP&R funding at the prorata share. The approval memorandum will indicate the pooled-fund study number and an R&D technical contact who will be available to provide any assistance to the study.

Draft Statement of Work

The lead state will prepare a draft Statement of Work (scope of services) including a cost estimate and selection criteria. This package will be sent to those states that previously indicated an interest in participating in the study. The participating states should be advised to submit their PR-2 forms, obligating the funds, to their FHWA Division Office. (See Section 7.4 for the PR-2 form.)

RAC Handbook

Commitment of Funds

To put their funds into the pool each state must submit a PR-2 form to their FHWA Division Office. The PR-2 form should include the approved study number.

Establish a Technical Advisory Committee

The lead agency is responsible for establishing a Technical Advisory Committee (TAC) for the study. Each participating state should be invited to participate on the TAC.

The TAC should assist the lead agency by reviewing the statement of work, participating in the selection of the contractor, reviewing the study progress and reviewing the draft final report. If a large number of states are participating in a study it may be necessary to create subcommittees for such tasks as contractor selection.

Study Initiation

Based on the study requirements, the actual work may be conducted by either a state transportation agency or an outside contractor. If the work is performed by a state transportation agency, the Statement of Work will be used as an outline to conduct the study. If an outside contractor is to be used, the lead agency shall follow its approved administrative and contracting procedures in obtaining these services.

Regional Pooled-Fund Study Process Flow Chart

REGIONAL POOLED-FUND STUDY PROCESS FLOW CHART	
ITEM	RESPONSIBLE OFFICE
Prepare Problem Statement	Originating State
Solicit Interest	Originating State
Request 100 Percent SP&R Funds	Originating State
Approval of 100 Percent SP&R Funds	FHWA R&D
Prepare Draft Statement of Work	Originating State
Submit PR-2s	Participating States
Establish Technical Advisory Committee	Originating State
Study Initiation	Originating State

7.5.2.1 Regional Pooled-Fund Process Summary

REGIONAL POOLED-FUND PROCESS SUMMARY

Lead State:

- ! Develops the work program
- ! Requests approval of 100 percent SP&R funds
- ! Solicits the other states for participation

FHWA Division Office:

- ! Designates a Division Office Coordinator
- ! Forwards the state's request for use of 100 percent SP&R funds to the Regional Office

FHWA Regional Office:

- ! Forwards request for use of 100 percent SP&R funds with recommendation to the Associate Administrator for Research and Development

FHWA Associate Administrator for Research and Development:

- ! Approves the use of 100 percent SP&R funds
- ! Assigns a project number
- ! Notifies the Office of Fiscal Services (HFS-30) of the new project
- ! Designates the headquarters technical contact

Lead State:

- ! Requests participating states to obligate their funds
- ! Develops any agreements or contracts for conducting the study

FHWA Division Office Coordinator:

- ! Initiates an overall project agreement with the lead state
- ! Forwards completed agreement documentation to HFS-24

FHWA Office of Fiscal Services (HFS-24):

- ! Establishes a project folder for tracking obligation and payments

Lead State:

- ! Administers the study
- ! Submits bills to the Division Office Coordinator (NOTE: Bills for pooled-fund studies must be submitted separately, outside the current billing system.)

FHWA Division Office Coordinator:

- ! Approves bills from the lead state and forwards to HFS-24 for payment

FHWA Office of Fiscal Services (HFS-24):

- ! Makes payment to state and charges the pooled-fund

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Lead State:

- ! Provides study results to participating states and the FHWA
- ! Notifies Division Office Coordinator of study completion

FHWA Division Office Coordinator:

- ! Submits final bill and notifies HFS-24 of study acceptance

FHWA Office of Fiscal Services (HFS-24):

- ! Ensures appropriate project distributions have been made and confirms to Division Office Coordinator that all project payments and distributions have been completed

FHWA Division Office Coordinator:

- ! Notifies lead state that the project has been closed out

Lead State:

- ! Notifies participating states of closure of the project

7.5.2.2 Expression of Interest Form Regional Pooled-Fund Studies

**EXPRESSION OF INTEREST FORM
REGIONAL POOLED-FUND STUDIES**

To: "Name and Address of Person Soliciting Participation"

From: _____

Subject: "Study Title"

____ Yes I HAVE REVIEWED THE PROPOSED STUDY AND AM INTERESTED IN
PARTICIPATING IN IT AS A POOLED-FUND STUDY.

COMMENTS:

____ No I HAVE REVIEWED THE PROPOSED STUDY AND AM NOT INTERESTED IN
PARTICIPATING IN IT AS A POOLED-FUND STUDY.

COMMENTS:

If "yes" is checked

Proposed level of funding: _____

Technical Contact: _____

Name: _____

Address: _____

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Telephone: _____

Fax: _____

Research Advisory Committee Member

7.5.2.3 Contact List for Several On-going SP&R Regional Pooled-Fund Efforts

(See also Section 2.5.3.2)

Regional Pooled-Fund Activity**Participating States/Organizations****New England Consortium**Charles E. Dougan
Connecticut DOT
860-258-0372
Gerald M. McCarthy
University of Connecticut
860-488-5400Connecticut
Maine
Massachusetts
New Hampshire
Rhode Island
Vermont**Midwest Regional Pooled Fund**Leona Kolbet
Nebraska DOT
402-479-4337

Nebraska	Ohio (pending-
Iowa	in final stage)
Kansas	South Dakota
Minnesota	Wisconsin
Missouri	Utah

Coastal and Tidal HydraulicsRichard L. Stewart
South Carolina DOT
803-737-6681South Carolina
Connecticut
Georgia
North Carolina
Maine
New Jersey
New York**Premature Rigid Pavement****Deterioration Study**

Vernon Marks

Iowa
Kansas

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Iowa DOT
515-239-1447

Louisiana
Minnesota
Nebraska
Wisconsin
American Concrete Paving Assn.
Portland Cement Assoc.

Regional Pooled-Fund Activity (Cont'd)

Participating States/Organizations

Public Perception of the

Midwest's Highway Pavements

Bob Schmiedlin

Iowa

Wisconsin DOT

608-246-7950

(participation agreements in process)

Wisconsin

Minnesota

Development of a Low-cost, Reusable,

Maintenance-free, Truck-mounted Attenuator

Dick Albin

Washington DOT

360-705-7269

Washington

Alabama

Connecticut

Georgia

Tennessee

Tel8 - Transportation Telecommunications Network

Gene Griffin

North Dakota State University

701-231-8343

Bill Evans

FHWA Regional R&T Engineer

303-969-6712

Colorado

Montana

North Dakota

South Dakota

Utah

Wyoming

Colorado State

University

North Dakota

State Univ.

Utah State Univ

University of

Wyoming

A Modern Design Standard for

Rock Fallout Areas

Rob Edgar

Oregon DOT

503-986-2846

Oregon

Alaska

California

New York

Tennessee

Washington

Wyoming

7.5.2.4 South Carolina Example Regional Pooled-Fund Process

SCDOT

South Carolina
Department of Transportation
P.O. Box 191
Columbia, S.C. 29202-0191

Daniel P. Fanning, P.E.
Director

August 26, 1994

Mr. Harvey A. Phlegar
Region 4 Research and Technology Engineer
Federal Highway Administration
1720 Peachtree N. W., Suite 200
Atlanta, GA 30367

Dear Mr. Phlegar:

Subject: Pooled-Fund Study Entitled "Development of Hydraulic Computer Models to Analyze Tidal and Coastal Stream Hydraulic Conditions at Highway Structures"

As discussed in the Regional RAC break-out session in Vail, Colorado, attached are the steps that were taken to initiate the above subject pooled-fund study.

If you have any questions or need additional information, please bring them to the attention of Mr. Mike Sanders of my staff.

Yours very truly,

signed
Richard L. Steward, P.E.
Research and Materials Engineer

Attachment

Pooled-Fund Study Procedures -- South Carolina

1. A letter was sent to all states soliciting interest in participating in the pooled-fund study. Attached is a problem statement which included the proposed research and the expected cost and time requirements to complete the project. Also, attached is a form to indicate interest in the study (Attachment 1). (Note, the problem statement is not attached in this *RAC Handbook* copy, the procedures material is included to show a viable example.)
2. After receiving several responses from states that they would be interested in participating, the project was brought before the Department's Research Advisory Committee for approval. The Committee approved pursuing the project as a pooled-fund study.
3. A second letter was sent to all states informing them that the Department's Research Advisory Committee had approved pursuing the project as a pooled-fund study and listing states that had earlier indicated an interest in participating in the study. The problem statement was circulated again to see if there was any change in interest to participate since previous response.
4. A letter was sent to all states who indicated an interest in participating in the pooled-fund arrangement explaining that the Department was preparing to proceed with obtaining a Principal Investigator and a proposal for the study. It was further explained that the Department intended to follow the same general procedures, with a few modifications since others were involved in the funding, which were required by our State for advertising projects and selecting consultants. These procedures were then explained. The letter then requested the following information:
 - A preliminary commitment on the amount of funding each state would provide. A firm commitment would not be requested until the final proposal was approved and the actual cost known.
 - The name, address, and telephone number of a representative from each state that would serve on the Steering Committee for the study.
 - The name, address, and telephone number of a representative for the Selection Committee, if desired. It was explained that to maintain status as a voting member, all meetings of the Selection Committee would have to be attended. There would be a minimum of three (3) meetings with other meetings scheduled as considered appropriate due to events as they occurred.
5. Selection and Steering Committees formed.
6. A draft scope of services, advertisement, and selection criteria form were prepared and sent to all Selection and Steering Committee members for their review and comments.
7. Selection Committee meeting held to discuss the draft scope of services, advertisement, and selection criteria form.

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8. Scope of services, advertisement, and selection criteria form revised as per comments from Selection Committee meeting.
9. A letter was sent to all participating states forwarding a copy of the revised scope of services, advertisement, and selection criteria form. Each state was encouraged to advertise the study through any means available to them.
10. The study was advertised by the Department following regular procedures required by our State.
11. A letter was sent to Selection Committee members forwarding a list of interested consulting firms which responded to the advertisement.
12. A Selection Committee meeting was held to short-list the consultants. After some discussion, the selection criteria forms were handed in and tallied up. The top three (3) consultant firms were selected for interviews.
13. The Selection Committee interviewed the three (3) selected consultant firms (30 minutes for a presentation, 15 minutes for questions and answers). After all three (3) interviews were completed, the Committee selected a consultant firm to negotiate for the study.
14. Consultant firm notified that they had been selected to negotiate for the study.
15. After negotiations were completed, the consultant firm was requested to prepare a formal proposal as per the scope of services for the study.
16. A letter was sent to Steering Committee members informing them which consultant firm had been selected and that a proposal was presently being prepared. The letter also stated that once the proposal was considered satisfactory by the Committee, it would be submitted to the FHWA requesting approval and 100% State Planning and Research (SPR) funding. Commitment forms from each participating state would also have to be submitted. A commitment form was attached with the letter. Each form had to include the following information:
 - The funds that the state planned to contribute by fiscal year.
 - A statement that the participating state had agreed that South Carolina would be the lead state and South Carolina procedures would be used for the effort.
 - An individual that could be contacted concerning the effort.
17. A letter was sent to all nonparticipating states updating them on the progress of the study and forwarding a copy of the proposal. This was a final solicitation of interest to ensure that all states had the opportunity to participate.

Attachment

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**South Carolina Example Regional Pooled-Fund Process
Attachment 1**

To: Mr. Richard Stewart, Research & Materials Engineer
Department of Highways and Public Transportation, Columbia, South Carolina

From: _____

Subject: "COASTAL AND TIDAL HYDRAULICS"

____ Yes I HAVE REVIEWED THE PROPOSED STUDY AND AM INTERESTED IN
PARTICIPATING IN IT AS A POOLED-FUND STUDY.

COMMENTS:

____ No I HAVE REVIEWED THE PROPOSED STUDY AND AM NOT INTERESTED IN
PARTICIPATING IN IT AS A POOLED-FUND STUDY.

COMMENTS:

Signature
Research Advisory
Committee Member

7.5.2.5 FHWA Master List -- Regional SP&R Pooled-Fund Studies

FHWA MASTER LIST -- REGIONAL SP&R POOLED-FUND STUDIES (11/28/95)		
Project No.	Title	Status
SPR-3(035)	Travel Model Improvement Program	New Project (11/22/95)
SPR-3(034)	Cove Electronic Data Sharing (EDS)	New Project (11/17/95)
SPR-3(033)	Premature Rigid Pavement Deterioration	New Project (10/17/95)
SPR-3(032)	A Modern Design Standard for Rock Fallout Areas	New Project (9/28/95)
SPR-3(031)	Reusable Truck Mounted Attenuators	Active
SPR-3(030)	Eastern States Institutional Issues Study for Commercial Vehicle Operations	Active
SPR-3(029)	New England Transportation Consortium	Active
SPR-3(028)	Lateral Work Zone Protection	Active
SPR-3(027)	Ohio SHRP Test Road Instrumentation	Active
SPR-3(026)	Public Affiliates Program	Active
SPR-3(025)	TEL8	Active
SPR-3(024)	HELP, Inc.	Active
SPR-3(023)	Maintenance Free Safety Appurtenances	Active
SPR-3(022)	Tidal and Coastal Hydraulics	Active
HPR-3(021)	Ice Forces on the St. Regis River	Active
HPR-3(020)	IVHS Study (ENTERPRISE)	Active
HPR-3(019)	Alluvial Fan Flood Flow and Sediment Analysis	
HPR-3(018)	Refined Precipitation Frequency Maps	Active
HPR-3(017)	Midwest States Pooled-Fund Crash Test Program	Active
HPR-3(016)	Model Quality Assurance Specifications	Completed
HPR-3(015)	ALF Pilot Test of In-Service Pavements	Completed

FHWA MASTER LIST -- REGIONAL SP&R POOLED-FUND STUDIES (11/28/95)		
Project No.	Title	Status
HPR-3(014)	Bar Code Reading of Trucks in Weigh Stations	Completed
HPR-3(013)	Arid Area Hydrology	Completed
HPR-3(012)	No record of this number being used as a Regional Pooled-Fund number	This number will not be used
HPR-3(011)	Interstate Highway Research Project (MD) (AASHTO Study)	Canceled
HPR-3(010)	Crescent Study (Part I Funds) This study is not monitored by FHWA R&D.	Active
HPR-3(009)	New England Surface Transportation Consortium	Completed
HPR-3(008)	Effectiveness of Field Repair of Out-of-Plane Bending Failures in Structural Steel Two-Girder Connections	Closed Out
HPR-3(007)	Expanded Montana Asphalt Quality Study Using High Pressure Liquid Chromatography (HPLC)	Closed Out
HPR-3(006)	Synthesis and Evaluation of Effectiveness of Existing Rehabilitation Techniques for Jointed Concrete Pavements	Closed Out
HPR-3(005)	Visual Incident Detection Evaluation Operation (VIDEO)	Closed Out
HPR-3(004)	Upgrading Safety Performance in Retrofitting Traffic Railing Systems	Closed Out
HPR-3(003)	Deer-Vehicle Accident Study	Closed Out
HPR-3(002)	Urban Traffic Control/Bus Priority System (UTCS/BPS)	Closed Out
HPR-3(001)	Microwave Heating for Road Maintenance	Closed Out